Coming now to the lower extremity, the most common source of pathological misconception along these lines is *sciatica*. Pain and tenderness along the course of the sciatic nerve placed this disease long ago among the disorders presumably completely understood though generally intractable. It was thought quite a step in the right direction to suggest that the affection of the nerve was a neuritis rather than a neuralgia. In this connection it was noted that *sciatica* was often accompanied by lumbago. But it was left for the orthopedist to teach us that in the majority of cases the trouble with the nerve is merely secondary to, and a symptom of, disease of the spinal column at the point of emergence of the nerve-roots — most commonly an osteo-arthritis or a sprain of the sacro-iliac synchondrosis, as taught by Goldthwait. This can be, as a rule, easily demonstrated by making the patient bend the back forward, backward and sidewise. One or more of these movements will show marked rigidity of the lower spinal column, and elicit pain in that region. Curiously enough, prior to this realization, the most satisfactory treatment of *sciatica* by neurologists consisted in strapping the back in case of lumbago, or Dana's rest in bed with splint reaching from the leg to the armpit and secured about the *trunk*.

So many cases of otherwise intractable *sciatica* have readily succumbed to orthopedic treatment (oftenest mechanical support to the spinal column) that recourse to the orthopedist for this symptom has now become, with some neurologists at least, a routine practice.

One of the most important directions in which the orthopedist has helped the neurologist, and the neurologist in turn has frequent opportunity to help others, is in calling attention to the symptoms of flat foot. My own attention was called to this subject in a striking manner. A recurring pain in the inside of the right knee had been for years attributed to an old injury to that joint. An increase of the pain in recent years led to the suspicion that rheumatism (another stock diagnosis) had been added to the results of trauma. Flat foot had been considered, but eliminated, because *the pain often persisted during rest*, even in the recumbent posture. This is a very misleading sort of reasoning to apply to pain; it reminds one of the argument of the lawyer called to a client in jail.

"Why!" he exclaimed, "they cannot arrest you for that."

To which the client replied, "But they have."

In the case in hand rheumatic and other treatment having proved ineffectual, a visit was made to the orthopedist, who promptly pronounced the pain that of flat foot, a diagnosis substantiated by the fact that the patient, who had limped to his office, walked back in comparative comfort with the simple aid of a temporary support to the arch. This patient, after using for a time a plate and exercises, finally needed no further treatment than the use of the Thomas heel.

While the commonest seat of pain from flat foot, other than in the foot itself, is perhaps in-

side the knee, this diagnosis is always to be considered in case of unexplained pain occurring almost anywhere in the lower extremity; for example, on the outer aspect of the thigh, and even in the small of the back. A history of increase of weight, especially combined with excessive exercise, favors the diagnosis; signs of sluggish circulation in the foot with puffiness below the outer malleolus tend to confirm it.

The aim of this outline sketch is not so much to present new subject-matter as to emphasize the practical importance of bearing these diagnoses constantly in mind. The trouble, I find, is, not lack of familiarity with the fact, for example, that neuralgia may come from the teeth, or pain in the knee from flat foot, but lack of readiness in application of this knowledge to the particular case, and lack of persistence in the pursuit of these etiological factors in the face of contemptuous indifference on the part of the patient, and notwithstanding the assurance, by those apparently better qualified than ourselves to judge, that the suspected organs are not the source of the symptoms. I wish further to emphasize the fact that these conditions are not merely of academic interest, but are constantly recurring in the daily round, though unfortunately quite as often overlooked as recognized, in spite of, perhaps partly on account of, exceptional skill and learning on the part of the practitioner.

I have by no means exhausted the list of everyday disorders frequently misinterpreted, but hope that what I have mentioned will constitute an effective plea for the independent investigation of each case in place of blind reliance upon time-honored diagnoses.

MEDICAL NOTES ON NORTHERN ALASKA.

BY G. F. HOWE, M.D., LAWRENCE, MASS.

THE following are some general impressions gathered in the course of a year spent on the north coast of Alaska. The inhabitants of this country consist of Eskimos and a few white floe whalers and traders, mostly married to native women. Whale ships wintering north usually stop at Herschell Island, a place I did not visit.

In order to understand the course of disease amongst these people one must know something of their general scheme of life. In winter a typical Eskimo family lives in a house or igloo, made of logs, or stones covered with sod, and later snow. To economize heat this house is so low that the head of a tall man, kneeling, almost reaches the roof; and in size it is no larger than is necessary to contain the family and a few household utensils. The level of the floor is below the ground level outside. A long, low passage — that one must crawl through on one's hands and knees — having two or more doors in it, communicates with the exterior. Light is admitted through the roof, by a small window, covered with the peritoneum of the seal. Some air may enter

through this, otherwise there is usually no ventilation. If the house is too warm, a door to the outside is opened. The floor is covered with logs, on which the sleeping skins of the family are laid. Heat is furnished for the most part by blubber lamps, consisting of a shallow dish, often made by hollowing out a soft stone, filled with seal oil, with a wick made of dried moss or calico. Where driftwood is plentiful, as it is all along the North Alaska coast where there are no permanent villages, metal camp stoves have come into use.

The staple food of the coast Eskimo is seal meat, summer and winter, though whale, deer, bear, fish and ducks are important in their seasons. Though the primitive Eskimo diet was almost entirely animal, at present most reasonably prosperous natives get considerable tea, flour, sugar and tobacco. In fact, the children suffer considerably if deprived of flour and sugar now.

The best clothing is made from the skins of deer killed in August. At this season the deer has finished shedding one coat and is just starting to grow the next. The typical male costume consists of two shirts, each with hoods attached, made of deer skin, the inner worn with the hair next the body, the outer worn with the hair outside. Over these a light calico snow shirt is worn to keep the snow from driving in to the hair. The trousers and stockings are also of deer skin, worn with the hair in. In winter the boots are deer skin with the hair inside, but in the spring and summer waterproof sealskin boots are worn. The dress of the women is essentially similar to that of the men save that the shirts are worn longer, like short skirts. The entire suit of clothes weighs very little more than our winter clothes minus the overcoat, and is incredibly warm, owing to its imperviousness to wind, and to the non-conducting properties of the warm air held in the fur.

The same clothes are worn summer and winter, save that in summer one shirt is usually sufficient. By the time summer comes some of the hair is worn off the shirt, making it cooler. As soon as the snow begins to melt, the winter igloo begins to leak, and the family move out and live in tents. At present the tents are mostly canvas — two thicknesses — low and dome shaped. Formerly tents were made of deer or seal skin. The tent sticks are bent arctic willow or whale ribs. Two thicknesses of the lightest canvas are much warmer than one of the heaviest, on account of the air space between. The tents and winter igloos are kept so warm that formerly when indoors the natives removed their shirts and sat naked to the waist. The missionaries have somewhat discouraged this habit, without, I think, improving the general health of the community.

Tuberculosis is the great plague of the country. It was present, I am told, when white men first came into the country. I saw 5 cases of Pott's disease, 1 case of caries of the sternum, which, I believe, was tuberculosis, and a large number of cases of pulmonary phthisis. In summer the pulmonary cases improved markedly, while living out of doors, only to relapse again in winter.

Venereal disease is less common now than formerly in Alaska, as the natives come in somewhat less contact with the crews of the whale ships. I, personally, saw no gonorrhea or secondary syphilis, and only 3 cases of tertiary.

Very soon after the settlement of Nome an epidemic of measles swept up the coast with frightful mortality. Many who recovered fell victims to pneumonia and phthisis. This epidemic carried off nearly half the inhabitants of some of the villages.

A disease, similar to, if not identical with, influenza, is endemic at Point Barrow, and any stranger passing through is almost sure to contract it. The natives recognize the contagious nature of this disease, as one of them told me he should never take his children to Point Barrow lest they get sick.

Human nature is very much the same in the Arctic as elsewhere, and imaginary diseases and neurasthenia are not uncommon. There was one native who, for no apparent reason, decided that he was going to die, so he smashed his drum and sat moping in his tent. I could find nothing the matter, but gave him a placebo of about 1 oz. of castor oil, with excellent results. This same fellow on another occasion saw a picture of a white man's devil and promptly decided he had one inside him. Forty-five minims of tincture capsium were efficacious in removing his satanic majesty. The man showed me a place on his stomach where he said the devil came out. An old woman came to me saying that her head was (nayietok) broken. I could find nothing the matter, but gave her a couple of migraine tablets and some methylene blue. The break was entirely mended and the woman who had done no work for a month went joyfully to making me a skin suit of clothes. The old women, like some old women down here, are fond of describing marvelous diseases and suggesting absurd cures, each trying to outlie the other.

The Eskimo's original idea of disease, in fact, his idea at present, was that a devil got into one. The cure was to drive the devil out. This could be done by frightening him with incantations, consisting largely of dancing, yelling and beating of drums. A man might cure himself in this way, but it was desirable that his friends should assist. If a native doctor was present he would probably collect as large a fee as possible for presiding at the performance. In any case a large number of volunteers could be obtained by promising a feast. If the yelling, drumming and dancing failed to help the patient, cutting would be tried. This consisted in cutting a hole in the afflicted part as large as the doctor thought wise or the patient would allow. Whether the devil comes out through this hole or "bad blood" is supposed to escape, I do not know. The skill of the physician is shown by knowing where and how large a hole to cut. If the first cut does not cure, another is made somewhere else. The cut for snow blindness is usually made above or at the outer side of the eye.

For the prevention of snow-blindness, the

natives have one really efficient device, consisting of a wooden eye shade, blackened on the inside, with a narrow slit to look through. This effectively shields the eye, both from the glare of the sun above and from the reflected light of the snow below. I saw one case of trachoma in a Point Barrow native.

Formerly, at the time of childbirth, a woman retired to a separate house or tent to have her child. No one entered the house or offered any assistance. Now, frequently, other women are present, and, if there is any trouble, the help of a white man is welcomed. When twins are born, if it seems feasible, both are raised, if not, one is exposed to die. The natives are sorry to do it, but take it calmly as a matter of course. A woman nurses her child as long as she is able, or till another child is born. This is rather necessary, as native food is not very satisfactory for weaning a young child. It is not an uncommon thing to see children three and four years old nursing. A large infant mortality, due to improper feeding, makes large families the exception. A child is allowed to eat anything its parents do. Abortion is occasionally practised, by means of violent abdominal massage, but is not common, as, generally speaking, children are desirable assets.

In cases of frozen hands and feet some crude surgery is practised, consisting usually of amputation after the part is very gangrenous. There is little liability to sepsis in the country, so the results are not as bad as might be expected. So far as I know, they have no proper knowledge of making skin flaps to protect an amputation. Usually the natives show remarkable self sacrifice and patience in caring for a crippled member of the family, but in times of severe trouble they may abandon him to die with the greatest calmness.

It has been said that cancer does not exist among the Eskimo. So far as I could find out this is true, not only of cancer, but of all classes of tumors among men. Smallpox, chicken pox, scarlet fever and mumps have not yet visited this country. There were a few cases of probable typhoid at Point Barrow last winter. They were described as cases of prolonged high fever with hemorrhages from the bowels. On account of the unsanitary habits of the people, it seems probable that there will be more of it later, as the country round is practically a marsh, with no drainage in any direction.

In spite of the fact that there is very little danger of serious sepsis and traumatic wounds, even when the peritoneal cavity is opened, usually giving no trouble, pus bacteria must exist in the country. Boils are not uncommon, and I saw 3 cases of chronic osteomyelitis of the long bones.

A curious disease, known by the local name of "mollicolly," exists among the dogs of the country. Though somewhat similar in its symptoms to rabies, I am very sure it is a separate disease. The etiology is doubtless a micro-organism present in the mouth of the dog affected, since the bite is undoubtedly infectious. The disease is most common in the spring and summer, when the dogs

are picking up scraps and digging in the ground, but occurs occasionally at all seasons. It is much more likely to break out near permanent villages than among dogs brought up in the back country or distant parts of the coast. Young dogs from six months to a year and a half old are most susceptible. The incubation period I was unable to determine with any certainty, but it is probably more than ten days. The onset of the disease is shown by restlessness and a causeless desire to pick fights with other dogs. Usually the affected dog loses his appetite, but is apt to chew wood or other unnatural objects. As the disease progresses the dog seems to be in great pain and death usually ensues in about ten days, due, probably, to exhaustion. Very rarely a dog recovers. Convulsions occur, but are not characteristic; the dog, however, is not rational. In none of the cases that I saw, about 6 cases, did the dog make any deliberate attempt to attack men, but all were likely to snap if handled. My principal reason for believing this disease distinct from rabies is that, while men, both white and native, have frequently been bitten by dogs in this state, I have never heard of their being affected by it. The natives are no more afraid of the bit of a mollicolly dog than of a healthy one. Foxes and wolves are said to be subject to this disease, and to be able to transmit to it dogs.

I kept records of the hemoglobin of a party of six white men from September to March, covering the whole period while the sun was away. There was no diminution of hemoglobin attributable to the absence of sunlight. Similar experiments were tried on the Jackson-Harmsworth expedition to Franz Josef Land, the Duke of Abruzzi's expedition and Scott's Antarctic expedition with the same results. In no case was it found that the absence of sunlight caused anemia.

In winter frost bites are common. The best treatment is to hold the warm hand against the affected part till it is thawed. In no case should rubbing with snow be tried, as then the skin is sure to come off. Later treatment is the same as for an old burn.

Many Arctic travellers have complained of extreme thirst while traveling, and said that eating snow or ice only increases this. If proper precautions are used snow and ice can be eaten in moderate quantities with great relief. If good ice can be obtained it is better. The ice should be held in the hand till the surface begins to melt, for if it is put into the mouth before this it will stick to the tongue like cold iron. If snow is used it must first be melted in the hand till it is almost slush. By observing these precautions glossitis may be avoided, and one's thirst fairly well satisfied.

In closing, I will say that the Eskimo race in Alaska has greatly diminished in numbers in the past twenty years, in a large part because of disease inevitably introduced by the whites. Whether the race will acquire sufficient immunity to withstand this sort of thing time alone will tell. I think the outlook for the Eskimo in his natural condition is better than that of the North American Indian,

FIG. 1. Section through the top of the papilla showing dilated and varicose vessels projecting above the surface.

because the Eskimo is industrially valuable to the whites in the extreme north. The Eskimo, while useless for steady day labor, is docile and satisfactory as a hunter and trapper. He makes a good sailor on a whale ship and is practically necessary to the men engaged in floe whaling.

VARICOSE VEINS OF THE PAPILLA OF THE KIDNEY. A CAUSE FOR PERSISTENT HEMATURIA.*

BY WILLIAM F. WHITNEY, M.D., BOSTON.

THE following case is of interest as throwing some light on those which have been noted from time to time and have been spoken of as symptomless or painless hematuria, or renal hemorrhage from a sound kidney; in other words, where the observer has been unable to discover an adequate cause for the trouble. While one case alone may not be sufficient to furnish the explanation for all of these, it will indicate a further line of inquiry, and as an independent observation help to confirm a few somewhat similar ones previously recorded. Certainly the conditions here found must be taken into account before a case can be relegated to the limbo of the unknown.

A middle-aged man entered the Massachusetts General Hospital, in October, 1907, in the service of Dr. M. H. Richardson, with the history of repeated attacks of hematuria, covering a considerable period. Careful examination failed to reveal any of the well recognized causes, and upon cystoscopic examination by Dr. Hugh Cabot, bloody urine was seen to come from the orifice of one ureter. It was decided to operate and one kidney was removed.

I examined it at once, and in general it appeared as a somewhat pale but otherwise normal kidney. On closer inspection it was noticed that the tips of one or two of the papillae, at one end of it, were reddened and a little spongy. These were cut out at once carefully and hardened in Zenker's fluid, embedded in paraffin, sectioned, mounted and stained with eosine and methylene blue.

The microscopic examination showed the small venules, at the tip of the papilla, dilated irregularly to twice or three times their normal size, and covered on their free surface with the finest possible film of connective tissue and a single layer of epithelial cells. Here and there they projected as varicose knuckles above the surface. (Fig. 1.) The conditions, in fact, were such that the slightest violence must have caused a rupture with subsequent escape of blood. In one specimen a rent was found in one of these thin walled channels, but it cannot be stated positively that it may not have been an artefact. The lumen of the vessels, in many places, was filled with a finely granular detritus and occasional blood corpuscles, but no well-marked thrombi were seen. That hemorrhage must have taken place here, however, is borne out by the fact that the straight tubules of this region contained blood corpuscles, which were not found higher than the base of the pyramid.

The anatomical conditions above described are certainly adequate to cause frequent and severe hemorrhage. For we have only to call to

mind what an insignificant lesion will produce a very severe epistaxis to realize what might happen after the rupture of one of these small varicose vessels.

It is interesting to find what an abundant vascular plexus there is at the apex of the normal papilla and by what thin tissue the vessels are separated from the external surface. The size of the normal vessels, however, is very much less than in this case, so that their covering is actually and relatively very much thicker. It is only to be wondered at that hemorrhage is not much more frequent from this source, and it possibly may be, and may account for the blood found in the urine in some cases of congestion of the kidney.

After this case had been studied, my attention was called to a series of cases reported by Fenwick,¹ under the title: "Painless Hematuria of Angioma or Capillary Nevus of a Renal Papilla." Among these the above case should be classed, although the condition is one of varicose veinules rather than angioma or nevus. It might aptly be designated in the graphic language so often used by Mr. Fenwick, as bleeding piles of the papilla. As an independent observation, therefore, it should help to confirm his excellent ones, which have been doubted in some places. His are the only other cases I have found as yet, of which the following is a brief summary:

CASE I. March, 1898. Woman, eighteen. Intermittent hematuria for five years. Papillectomy. On examining under water it was not villous as was supposed, but the vessels of the mucous membrane clothing the papilla were markedly varicose. Mr. Targett reported there was no evidence of growth, but there was a congestion of the vessels with extravasation of blood and an increase in the cellular stroma. This might be an early stage of a fibrous condition, such as is not uncommon at the tips of the papillae.

CASE II. September, 1899. Woman. Profuse hemorrhage two weeks before without any other symptoms. At operation a bright red varicosed condition, similar to that which had been encountered in the first case, was seen. Papillectomy. Mr. Targett reported the vessels in this part of the kidney distended with blood and with some extravasations.

CASE III. July, 1902. Male, thirty-six. Hematuria on slightest exertion. Pelvis opened and blood seen to issue from the lower infundibulum. Sulphate of iron applied. No benefit. Nephrectomy two months later. Kidney was found in a state of subacute nephritis, possibly the results of first operation. Regards it as primarily an angiomatous papilla.

CASE IV. Male. Hematuria for eight weeks. Operation consisted of an incision into the cortex of the lower third without entering the pelvis. Bleeding disappeared after a few days and healed rapidly. No return at the end of six months.

CASE V. April, 1898. Male, thirty-eight. Ten days previous symptomless hematuria. Cystoscopy. Blood efflux from left ureter. Operation. The finger was inserted into the pelvis through a deep incision in the cortex of the lower third. Hemorrhage ceased and had not returned after a year.

CASE VI. September, 1902. Woman, forty years. Had dark blood in her urine for two years without cessation, without symptoms. Operation, a deep in-

* Read before the Boston Obstetrical Society, March 24, 1908.

¹ Fenwick, H.: Clinical Cystoscopy, London, 1904, p. 392.